Philips Car Systems

automotive mannesmann VDO

Car Cassette Deck SCA-R/3.3/3.1

Service Manual

12 V

1. GENERAL

This supplement must be used together with the SCA-R3 service manual 4822 725 25481.
Because of changes and modifications in the meantime, the following parts have been revised and re-written:

- Technical data
- Maintenance
- Check & alignment procedure
- Dis- / Re-assembly procedure

Besides, a detailed 'Functional Description' has been added now. To clarify the descriptions, photographs and drawings are added where necessary.

2. TECHNICAL DATA

Operating voltages	:	10.0 - 16VDC (V1) (13.2VDC nom.) 4.75 - 5.25VDC (V2) (5VDC nom.)
Tape speed	:	4.76 cm/s ± 3%
Number of tracks	:	2 x 2
Wow and Flutter	:	≤ 0.5% (DIN w.)
S/N ratio	:	≥ 46dB (preampl.)
Crosstalk suppression (track 2-3)	:	≥ 50dB
Channel separation (track 1-2/3-4)	:	≥ 40dB
Fast winding time	:	≤ 100s (C-60)
Bus interface	:	I^2C
Weight (only mechanism)	:	400 g

PCS 92 224

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3. DETAILED FUNCTIONAL DESCRIPTION

3.1 Function / Switch Status Overview

Position	Standby Switch	Play Switch	Insert Switch
Eject	Open	Closed	Closed
Standby	Open	Open	Open
Wind	Closed	Open	Open
Play	Closed	Closed	Open

3.2 Eject Position

The transport disc (pos. 33) must be in the position, shown in fig. **1**.
NEVER turn the transport disc, unless it is not in the 'Eject' position (yet)! If not in 'Eject' position, turn the NOR fly-wheel pos. 11 counter-clockwise until the transport disc reaches the 'Eject' position.
After this position has been reached, don't turn it anymore!

3.3 Insert Function

When a cassette is inserted, the 'Insert' switch is opened; the servo motor is turning clockwise so that the cassette lift moves backward until the 'Play' switch is opened.
At that moment, the servo motor stops and the deck is in 'Standby' position. Refer to fig. **2**, especially to the 'Standby' switch position.

3.4 Standby-to-Play Function

The capstan motor turns in clockwise direction until the deck reaches the "Wind" position (FF / REW - fig. **3/4**) and the standby switch closes. At the same time the coupling assy (pos. 65 and 70) and gear rod pos. 54 are uncoupled from the servo motor and swivel lever pos. 47 is released now.
The servo motor pos. 12 turns the swivel lever until it grasps into take-up wheel gear pos. 21.
The rotation direction of the servo motor, together with the movement direction of the swivel lever, determines the play direction of the deck (NOR or REV).
The capstan motor turns clockwise until the transport disc reaches the "Play" position (Nor / Rev - fig. **5/6**). Now both the standby – and play switches are closed.
The servo motor starts to turn and tightens the tape.
Thereafter, the capstan motor starts to turn counter-clockwise for tape transport and uncouples the transport disc; simultaneously the servo motor now winds the tape (play function).

3.5 Tape End Detection

When the tape reaches the end when playing, this is detected by means of servo motor pulses. The microprocessor gives the command to the servo motor to change its rotation direction.

3.6 Play-to-Standby Function

The capstan motor now starts turning clockwise so that the transport disc assy is coupled again; the transport disc turns until both the standby- and play switches are open (refer to fig. **2**).
During the transport disc rotation, the coupling assy (pos. 65 and 70) and gear rod pos. 54 are coupled again to the servo motor and the swivel lever is disabled from the take-up wheel.

3.7 Standby-to-Eject Function

The capstan motor turns until the transport disc is in the right position to couple the loading assy. The servo motor starts turning so that the loading assy moves forward until the insertion switch is closed. At that moment the deck reaches the "eject" position and the cassette is ejected.

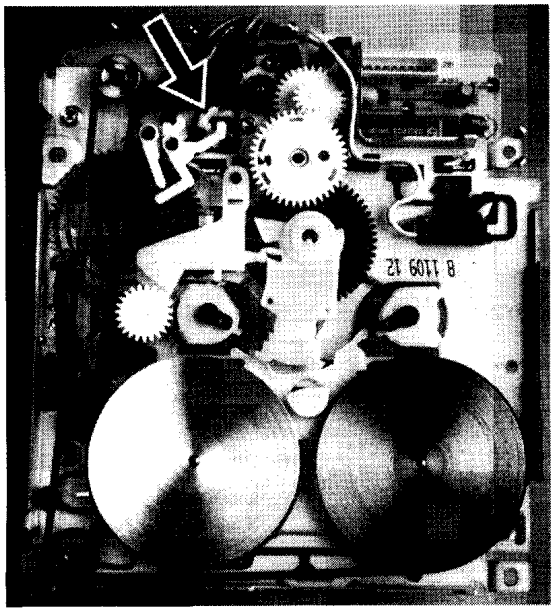


Figure 1

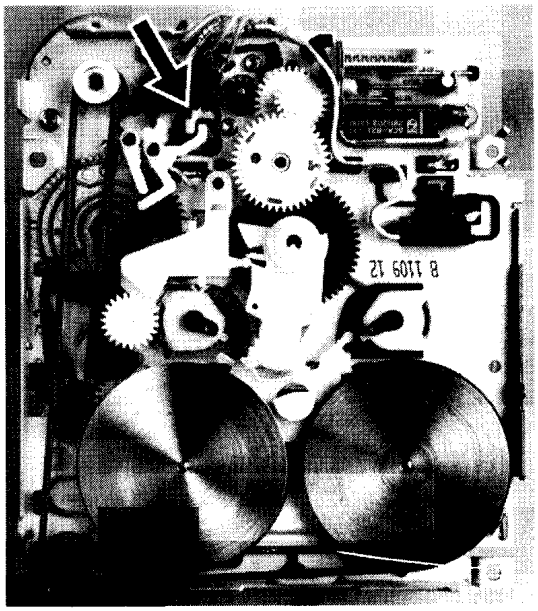


Figure 2

Figure 3

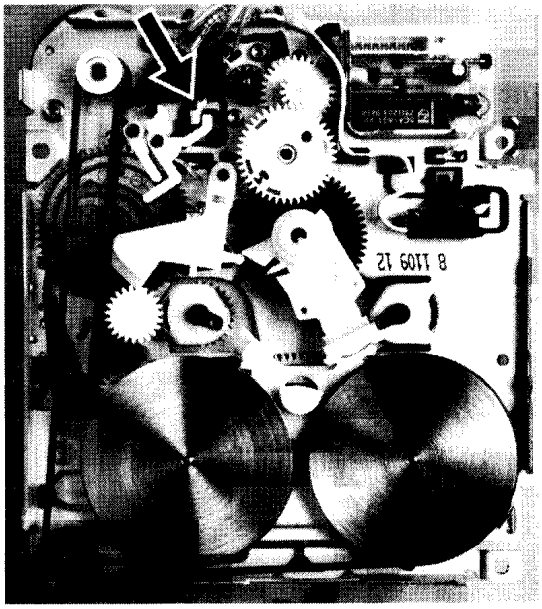


Figure 4

Figure 5

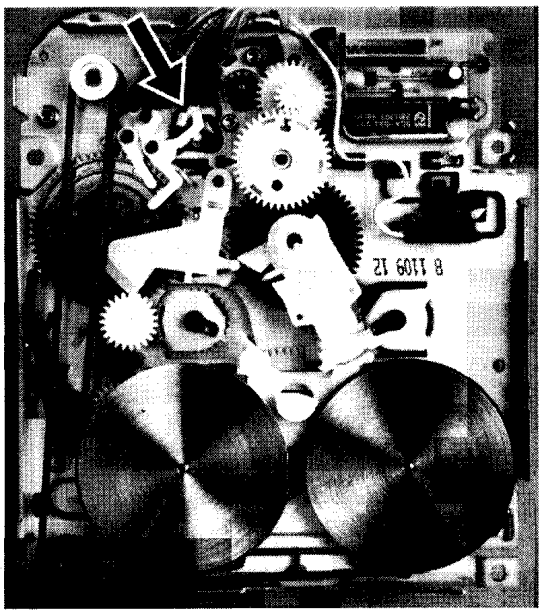


Figure 6

5.6 Mechanical Check

If there is no improvement of deck operation, first clean the deck as described, then check the following parts for correct functioning:

- Motors pos. 1 and 12
- Pressure rollers of pos. 42
- Belt pos. 3
- Flywheels pos. 9 and 11
- Diverting wheel (pulley) pos. 10
- All gears

In case of need to replace one or more parts, refer to the 'Dis-/Re-a ssembly Procedure' part.

6. DIS-/RE-ASSEMBLY PROCEDURE

6.1 Important

Before disassembling the tape deck, take care that the cassette holder pos. 51/52 is in the **eject** position. See figures **1** and **11**.
Handle the cassette lift assy carefully to prevent bending it.
For re-assembling, follow the procedures in reverse order. Take care that the wires, cams etc. are in the right position again after re-assembling.
For the exact position of the parts, refer to the exploded view (fig. **19**).

6.2 Standby position

Refer to figure **2**.
Take care that the cassette lift and the transport disc pos. 33 are in the right position (see '**6.1**') before to put it in the standby position!
The lift can be put in the standby position by turning gear assy pos. 16 / 17 / 92 to the right.
Hold the lever on pos. 52 in such a way that the cassette holder is unblocked and can move backward completely; keep turning the gear assy until lift moves downwards.
Be careful not to bend metal parts unnecessarily and not to damage the gears, flywheels and belt!

6.3 Switches

To remove the

- PLAY switch pos.100,
- STANDBY switch pos.101,
- INSERT switch pos.102 and/or
- ME/CR switch pos.103,

carefully slide the switch(es) concerned out of the holder.

6.4 Capstan motor pos. 1

- Remove the belt pos. 3.
- Remove the screw pos. 88.
- Carefully slide out the pcb fixation pos. 58 and lift up the pcb pos. 86.
  Take care not to damage the black pcb supports!
- Unscrew the two screws pos. 2.
- Unsolder the capstan motor connections and take out the capstan motor.
- When re-assembling, take care that the cam on the chassis grasps in the spare screw hole of the motor.
  Note: Use a *new* belt when re-assembling!

6.5 Servo motor pos. 12

- Remove the screw pos. 88.
- Carefully slide out the pcb fixation pos. 58 and lift up the pcb pos. 86.
  Take care not to damage the black pcb supports!
- Unscrew the two screws pos. 14.
- Unsolder the servo motor connections and take out the servo motor.
- When re-assembling, take care that the cam on the chassis grasps in the hole of the motor.
- *Note:* Take care *not* to damage the gears!

6.6 Pressure rollers pos. 42

- Remove the holders with the pressure rollers by unclicking them from the centre pivot which is at the right side of the base plate pos. 23.

6.7 Head assy pos. 28

- Remove the pressure rollers as described in '**6.6**'.
- Remove the spring pos. 30.
- Remove the head assy from the holder of the base plate pos. 23.
- *Note:* When re-assembling, take care to put the spring pos. 30 in the right position again! See figure **13**.

6.8 Flywheel / gear assy (NOR) pos. 11

- Remove the belt pos. 3.
- Remove the oil protection ring pos. 7 from the capstan of flywheel pos. 11.
- Remove fixation retaining ring pos. 6.
- Take out the flywheel.
- *Note: when re-assembling, use a new retaining ring and belt*, and take care that the gear does not become damaged. Put the flywheel spindle into the bearing carefully and turn it slightly.
  Clean the capstan.

(continued on page 5)

4. MAINTENANCE

The tape deck mechanism requires periodic cleaning.

4.1 Cleaning cassette

Use drop-in cleaning cassette SBC114 (4822 389 20035)

4.2 Cleaning with alcohol or spirit

- Cleaning with alcohol or spirit is also possible.
- Especially the following parts need cleaning:
  - Playback head pos. 28 including tape guides.
  - Capstans pos. 9/11 and pressure roller assy pos. 42.

5. CHECKS AND ADJUSTMENTS

5.1 Equipment

Equipment required:

- Universal test cassette SBC419 - 4822 397 30069
- Universal test cassette SBC420 - 4822 397 30071
- Friction test cassette 811/CTM - 4822 395 30054
- Spring scale 50-500g - 4822 395 80028
- Jig / puller for clutch - 4822 395 60039
- Wow & Flutter meter
- AC mV meters
- Power supply unit with adjustable voltage 0 – 30VDC / ≥ 2A

5.2 Wow & Flutter

This check has to be carried out on a COMPLETE car radio set; proceed as follows:

- Connect the wow & flutter meter to the LS outputs.
- Insert test cassette SBC419 or SBC420 and play the 3,150 Hz signal.
- The wow & flutter value must be ≤ 0.5% (DIN weighted – overall life cycle).

5.3 Tape speed drift / Speed adjust

- The tape speed must be 4.76 cm/s ± 3% (overall life cycle).
- The tape speed can be adjusted with the screw of the capstan motor.
- This screw can be reached via the hole in pcb pos. 86 (see figure **10**).
- Use a screw driver of 1.8mm with an insulated shaft.

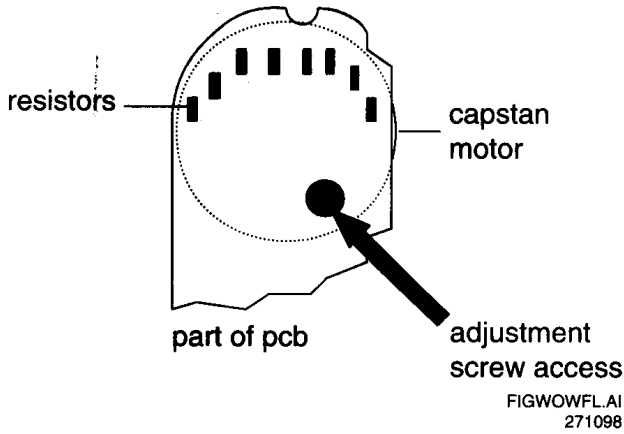


Figure 10

5.4 Play Torque

- Insert friction test cassette 811/CTM (NOR and REV).
- Play mode take-up torque must be 3.5 - 7.5 mNm.

5.5 Check Procedure of Electrical Operation

- ***Note:*** *refer to figures **7 – 9**.*
- First check the voltage at TP3 (collector of pos. 7102). It must be equal to the normal car voltage (nom. 13.2VDC). If this value is not met, check pos. 7102 / 7103 and replace if necessary.
- Measure the voltage between GND and pin 20 of pos. 7101, as indicated in figure **9**. It must be 150 ... 250mVDC and hence I_{R3113} must have a value between approx. 45 .. 76mA.
- Visually check resistors pos. 3109, 3110 and 3112. The value resp. must be: 9k1, 510Ω and 10k.
  In case of doubts, check the value with help of an Ω-meter.
- Measure voltage at the indicated point (pos. 7101 pin 24); this must be 2.4VDC (typical value). If this value is not met, replace pos. 7101 or pcb.
- Check the servo motor by measuring its coil resistance; the value must be approx. 12Ω.
- Check the mechanical operation of the motor by applying a voltage of approx. 3VDC to it.
  Notes: + to red-marked terminal; disconnect motor from IC!

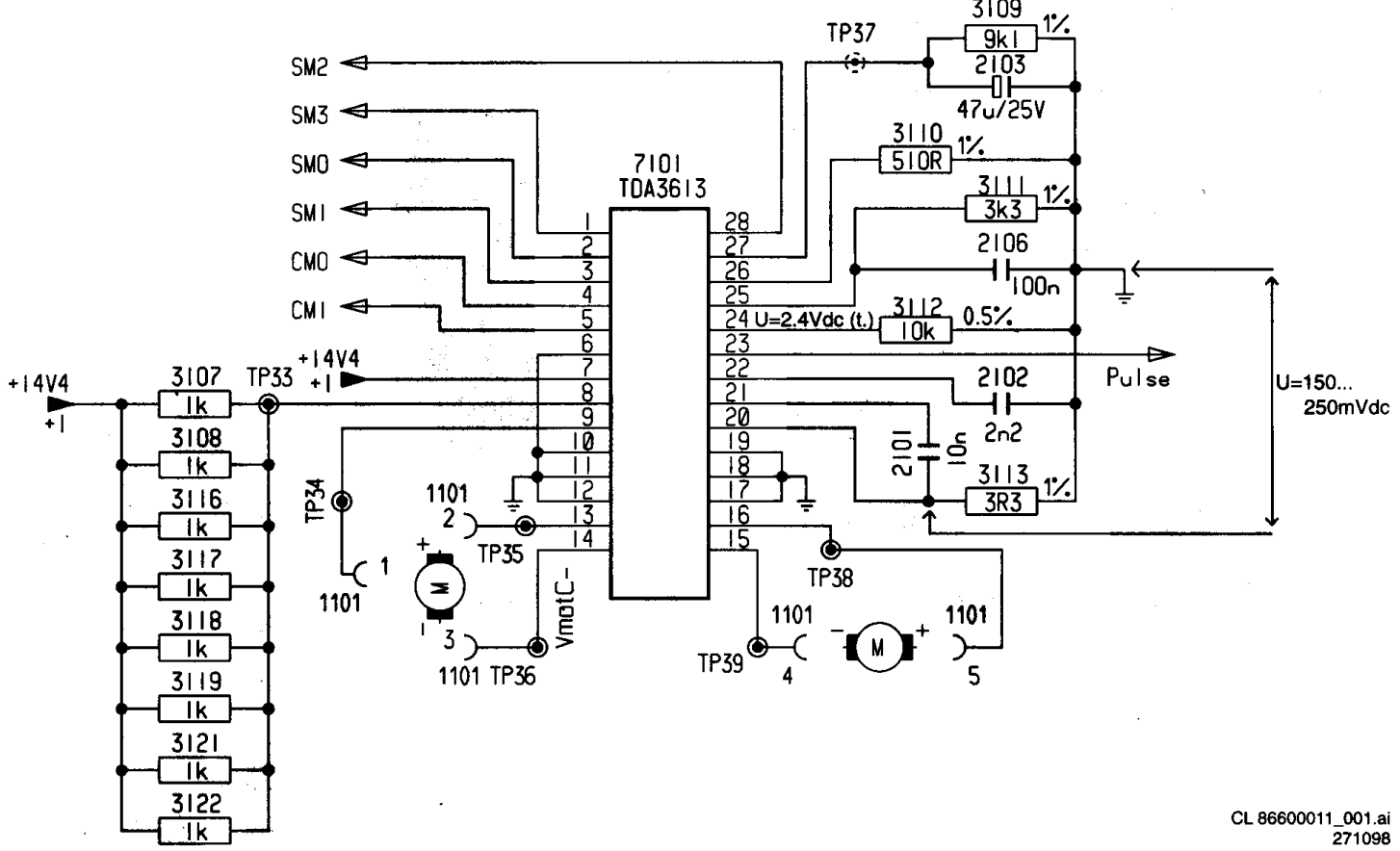


Figure 7

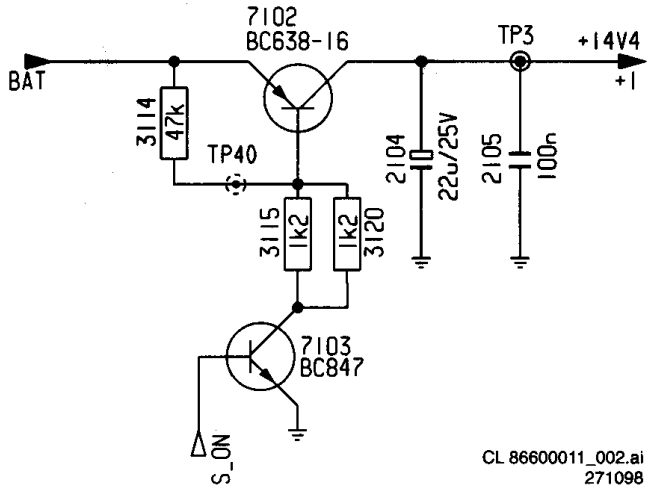
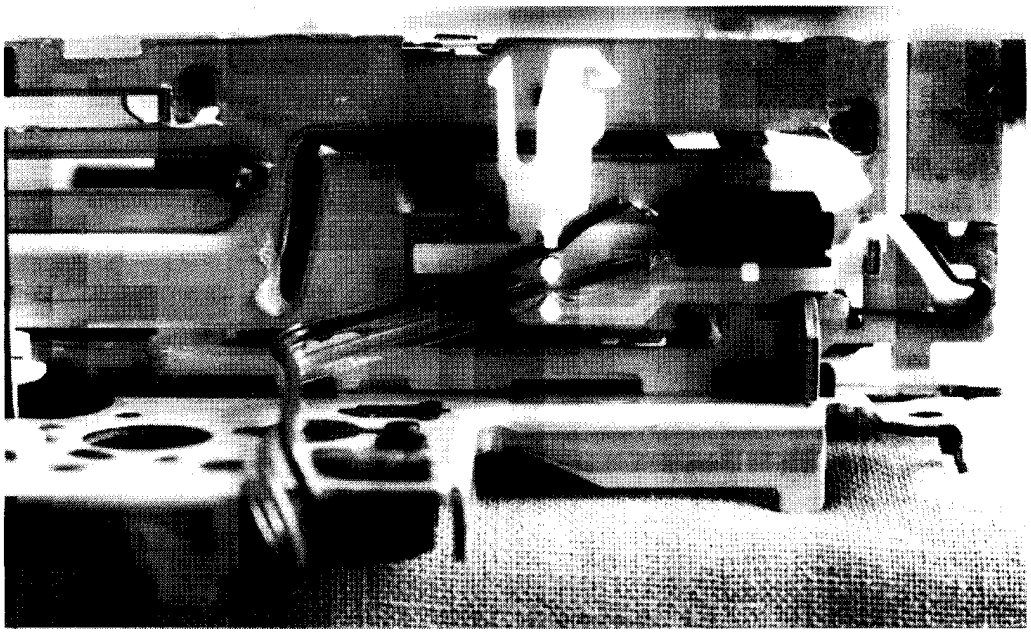


Figure 8



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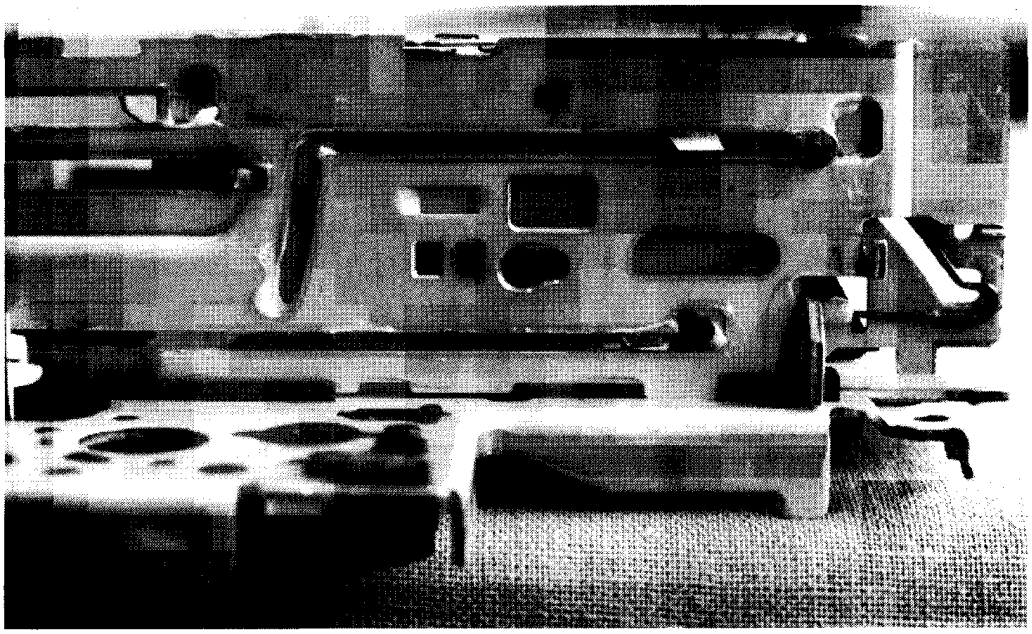

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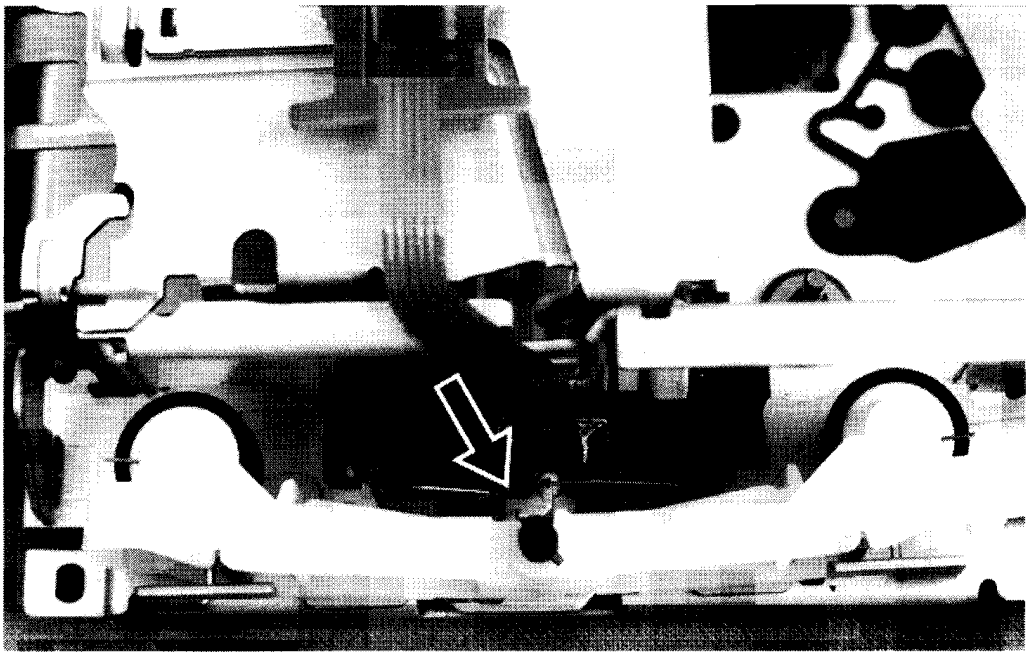

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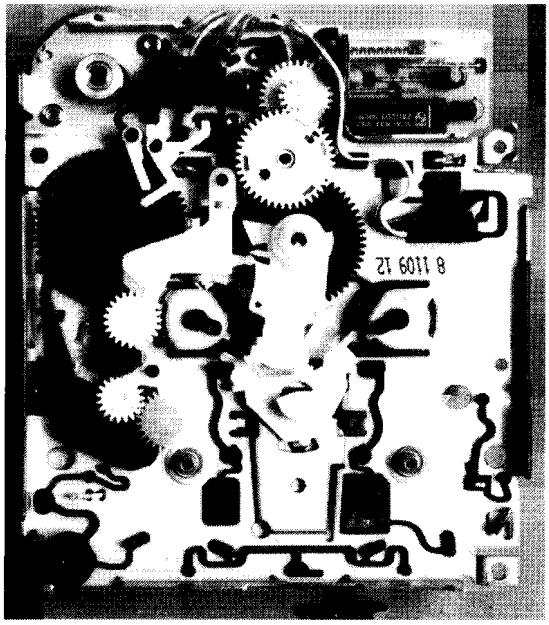

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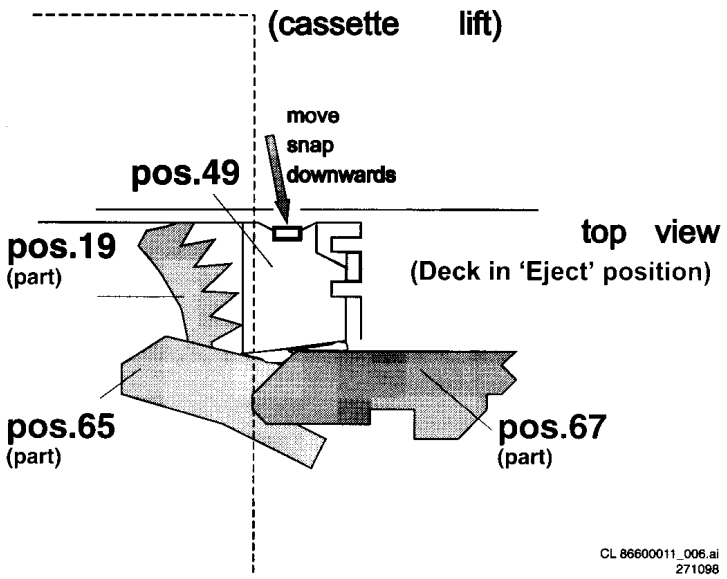

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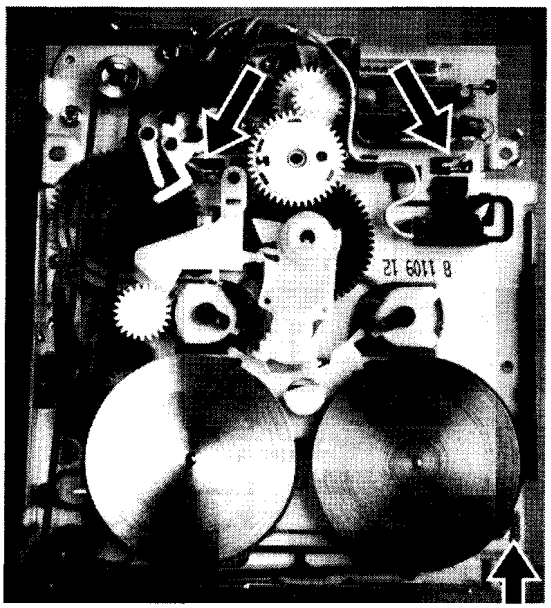

Figure 16

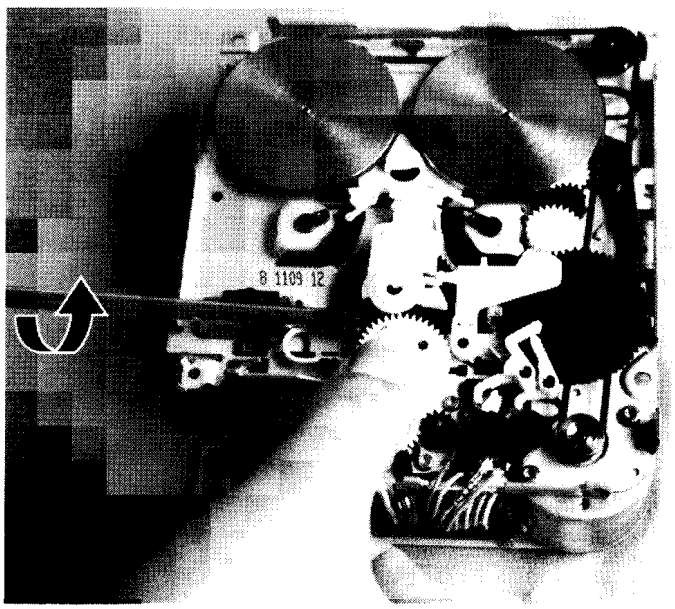

Figure 17

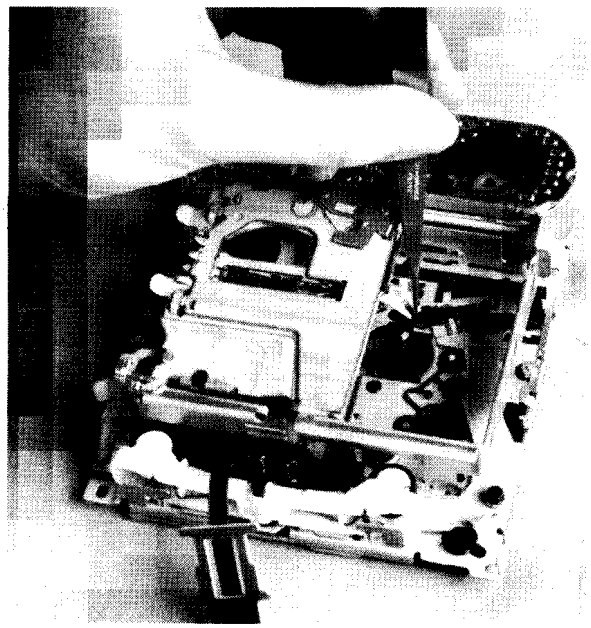

Figure 18

6.9 Flywheel (REV) pos. 9

- *First* move the cassette holder to the **standby** position. Refer to '**6.2**' and figure **2**.
- When the cassette holder reaches the standby position, the capstan of flywheel pos. 9 can be reached.
- Remove the belt pos. 3.
- Remove the oil protection ring pos. 7 from the capstan of flywheel pos. 9.
- Remove fixation retaining ring pos. 6.
- Take out the flywheel.
- *Note: when re-assembling, use a new retaining ring and belt!*
  Clean the capstan.

6.10 Take-up wheel (NOR) / back tension spring pos. 21

- The cassette holder assy pos. 51 / 52 must be in the **eject** position.
  If the holder assy isn't yet, turn flywheel NOR pos. 11 to the left.
- When the cassette holder reaches the eject position, take-up wheel (NOR) can be reached.
- Carefully shift levers pos. 65 / 67 in backward direction until the take-up wheel becomes free.
- Take off take-up wheel by pulling it upward and holding the fixation snaps of the pivot together simultaneously.
- *Note:* When re-assembling, grease the pivot. See figure **20**.

6.11 Take-up wheel (REV) / back tension spring pos. 21

- The cassette holder assy pos. 51 / 52 must be in the **standby** position.
  Refer to '**6.2**' and figure **2**.
- When the cassette holder reaches the standby position, take-up wheel (REV) can be reached.
- Take off take-up wheel by pulling it upward and holding the fixation snaps of the pivot together simultaneously.
- *Note:* When re-assembling, grease the pivot. See figure **20**.

6.12 Replacing Special Parts

Unless replacing after damaging, the following parts may be taken out NEVER:

- Transport disc pos. 33
- Switch wheel 1 pos. 37 / Switch lever assy pos. 39
- Gear rod pos. 54 / Lift wheel gear pos. 68
- Servo drive gear cluster pos. 15
- Diverting wheel pos. 10
- Coupling lever assy pos. 65

The following sections describe the dis- / re-assembling procedure of these parts, when they need to be replaced.

6.13 Transport disc pos. 33

- Remove belt pos. 3.
- Remove switching lever pos. 49 by releasing the snap as shown in figure **15**.
- Remove play switch lever pos. 80.
- Remove standby switch lever pos. 79.
- Carefully move the arm of switch lever assy pos. 39 away from the transport disc.
- Remove intermediate wheel pos. 34.
- Cut the three snappers of the transport disc pos. 33 and take out the disc. Do not damage the post!
- When re-assembling, insert a new transport disc. Take care that the head support contour is in the 'standby' position. Also take care that the switching lever pos. 49 is in the right position again!
  See fig. **1**.
  Grease the head support contour at the right points. See figure **21**.

6.14 Switch wheel 1 pos.37 / Switch lever assy pos. 39

- Remove flywheel (NOR) pos.11 as described in '**6.8**'.
- Cut pin of switch wheel 1 pos. 37.
- Take out switch lever assy pos. 39.
- When re-assembling, insert a new switch wheel.

6.15 Gear rod pos. 54 / Lift wheel gear pos. 68

- First remove the cassette loading assy pos. 50 by bending the three lips of the assy in straight position, lifting it at the front and sliding it out carefully. See figure **16**.
- Take out gear rod pos. 54.
- Remove fixation retaining ring pos. 6.
- Take out lift wheel gear pos. 68.
- *Note: when re-assembling, use a new ring!*

(continued on page 6)

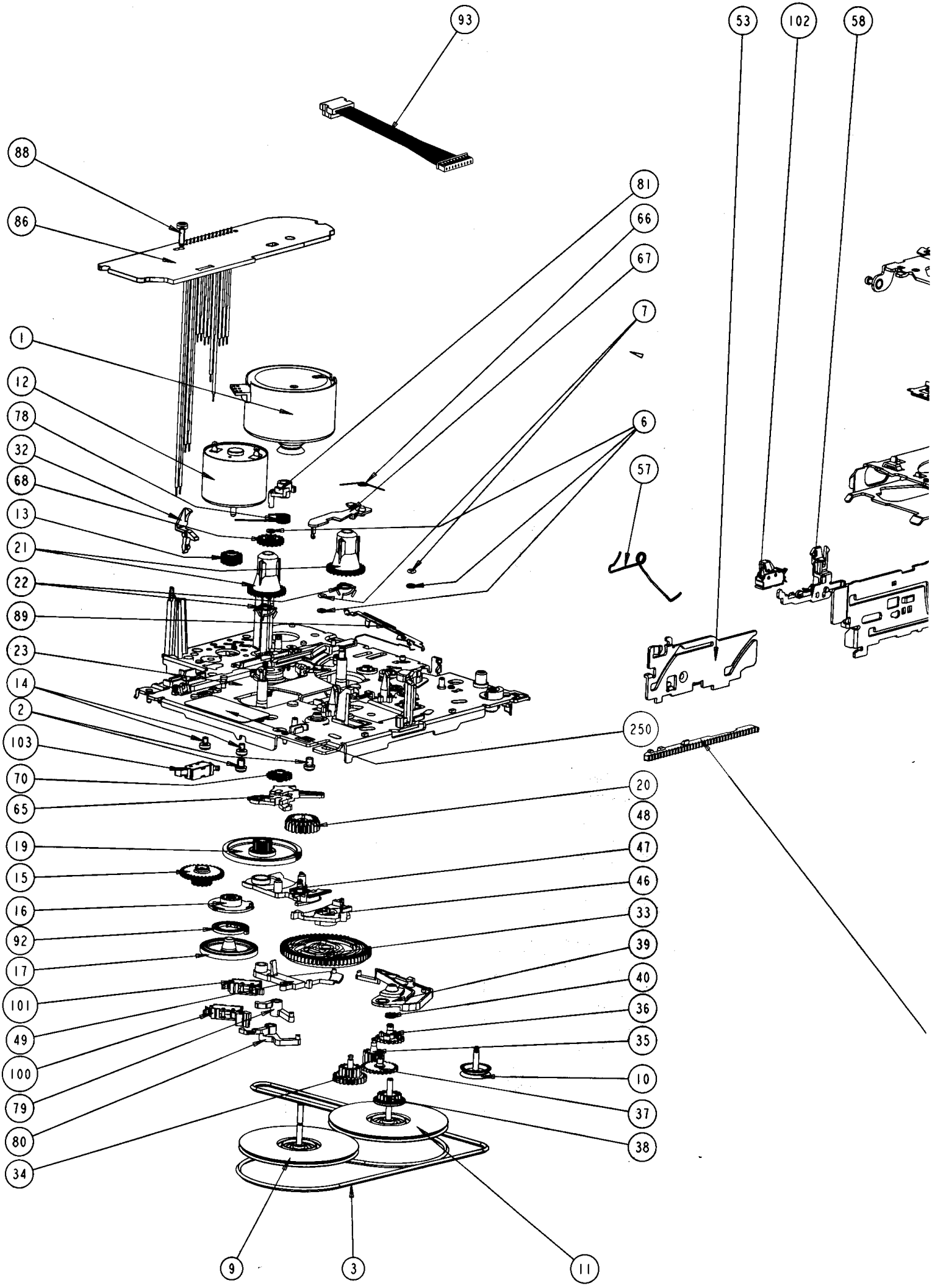
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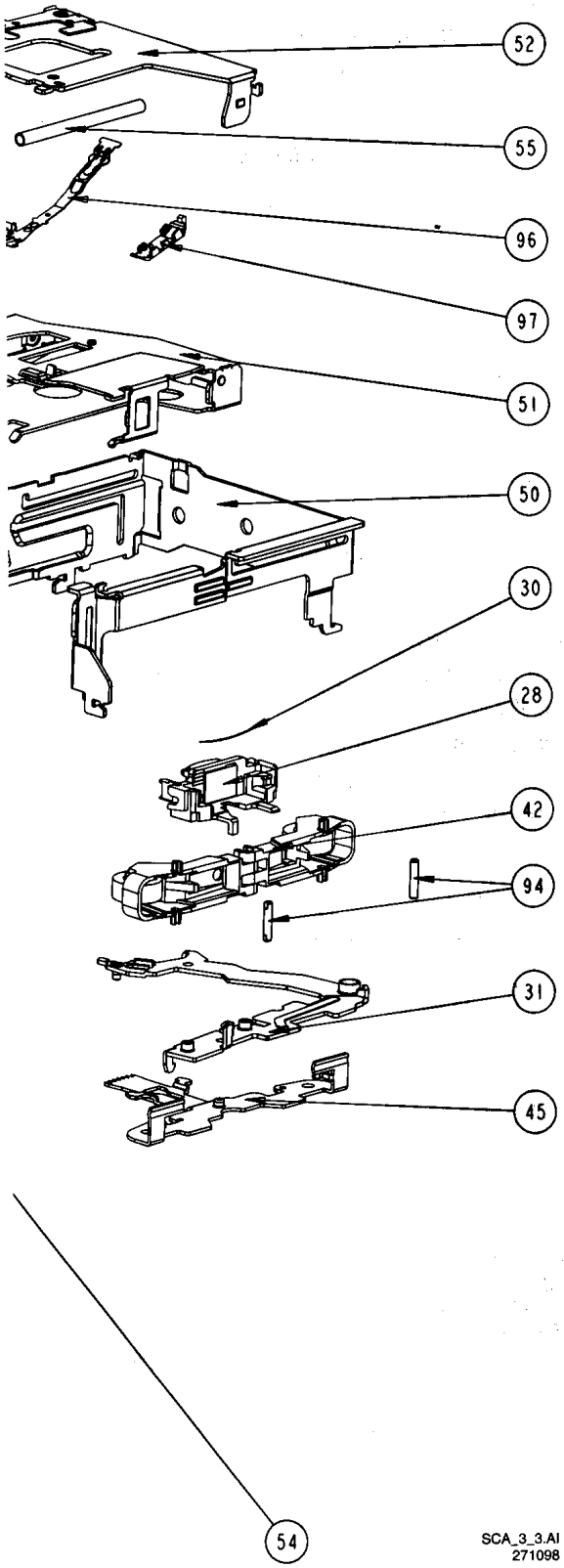
Figure 19



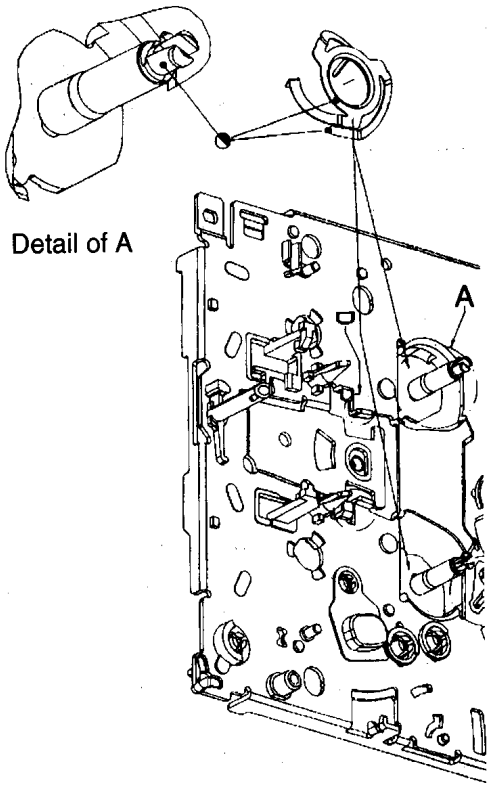
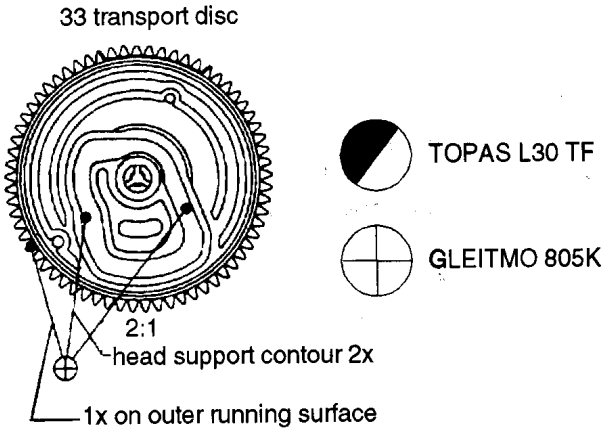


Figure 20



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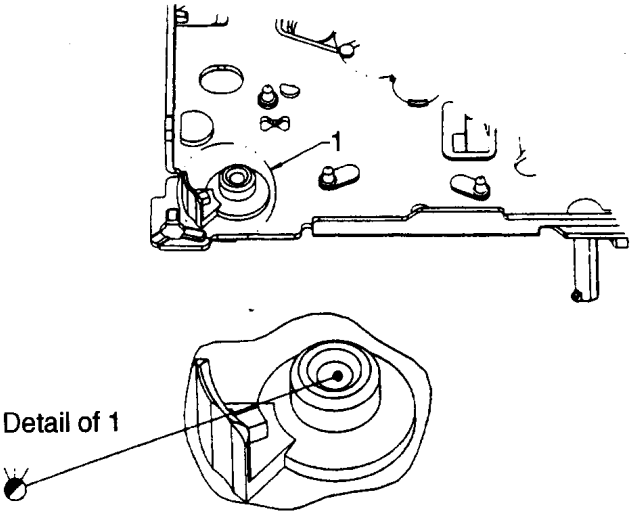

Figure 22

6.16 Servo drive gear cluster pos. 15

- *Note:* refer to figure **17**.
- Carefully lift the damping gear pos. 16 / 17 / 92 by a screwdriver as shown in the figure and remove it.
  Leave this assy complete!
- Remove switching lever pos. 49.
- Remove swivel lever assy pos. 47.
- Take out connection wheel pos. 19.
- Take out gear cluster pos. 15.
- *Important:* when re-assembling, oil the gear bearings.

6.17 Diverting wheel pos. 10

- Remove belt pos. 3.
- Remove the diverting wheel with help of special jig / puller.
- *Note:* When re-assembling, grease the wheel bearing in accordance with figure **22** and insert a *new* belt!

6.18 Coupling lever assy pos. 65

- Note: the deck must be in the **eject** position!
- Remove damping gear assy pos. 16 / 17 / 92 (see '**6.16**'). Leave this assy complete!
- Remove switch lever assy pos. 49 (see '**6.13**').
- Remove swivel lever assy pos. 47.
- Remove connection wheel assy pos. 19.
- Remove coupling spring pos. 66.
- Shift the coupling slider pos. 67 completely backward and remove it with help of a pair of tweezers.
  See figure **18**.
- Take out the coupling lever pos. 65.

6.19 Re-assembly precautions

When re-assembling the deck, take care of proper mounting of the cassette loading assy. The cam of the lift plate pos. 53 (A in figure below) must fall into the sleeve of the loading assy plate of pos. 50. See figures **11**, **12** and **23**.
The other cam B must fall into the notch of the gear rod.
The loading assy plate must match the base plate *completely*. Bend the three lips back into the right direction so that the loading assy plate is locked. See also figure **16**.

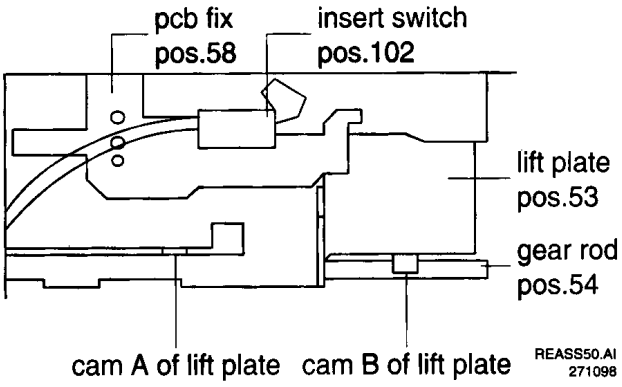

Figure 23

Always use a new belt when re-assembling it! The belt must be mounted as indicated in the figure below.
Take care that the belt is not twisted, not touched by grease and not damaged by sharp edges of the chassis!

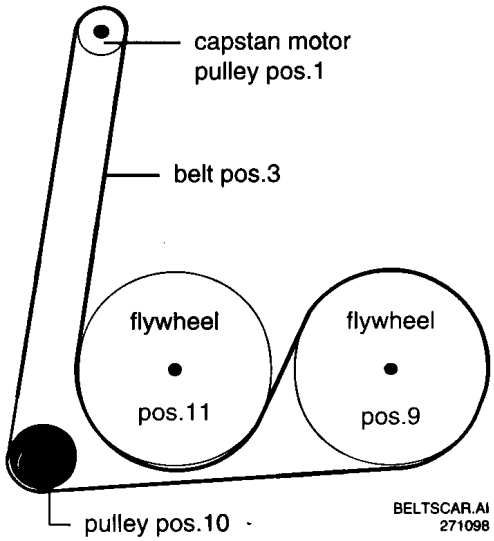

Figure 24

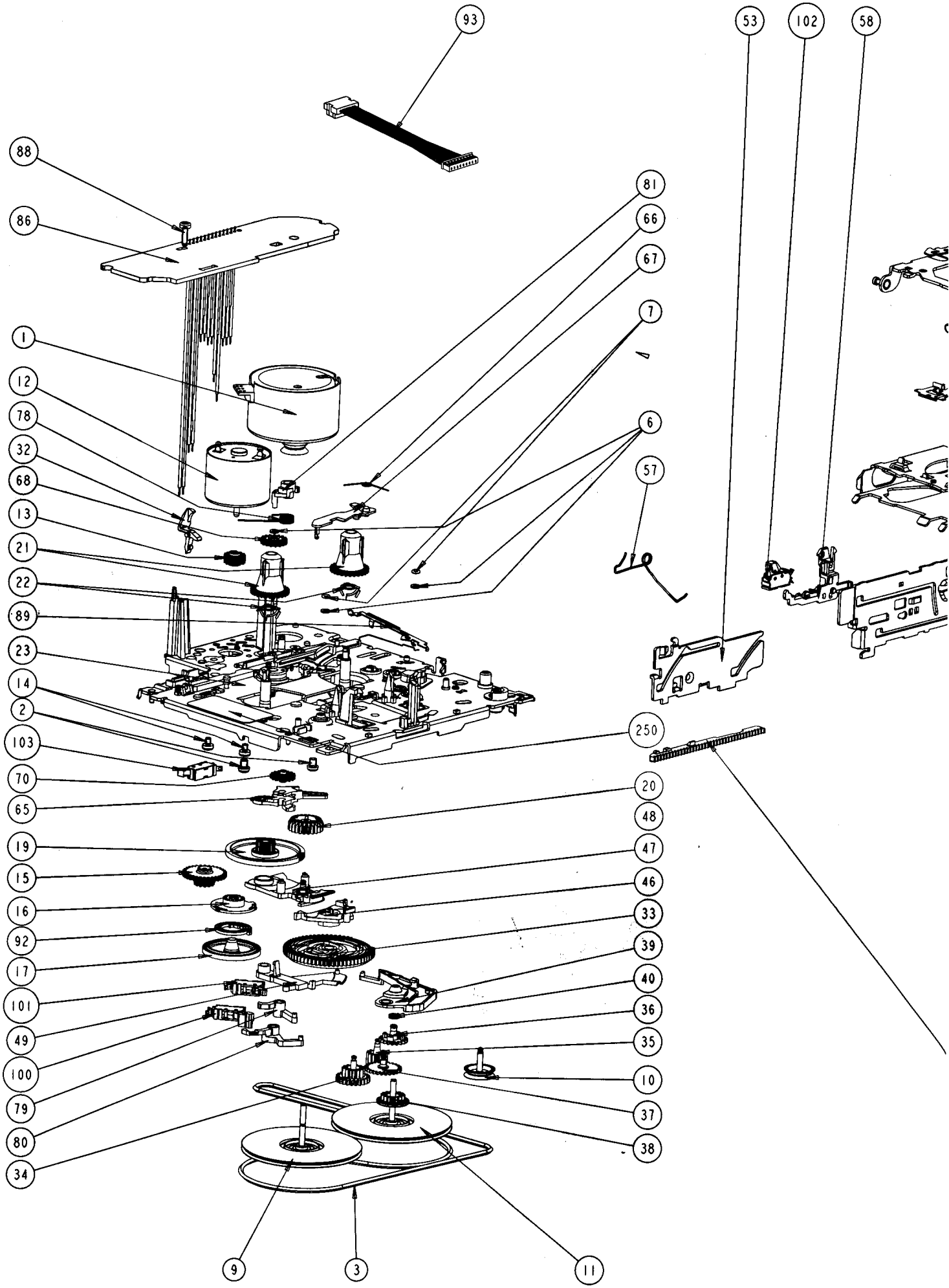
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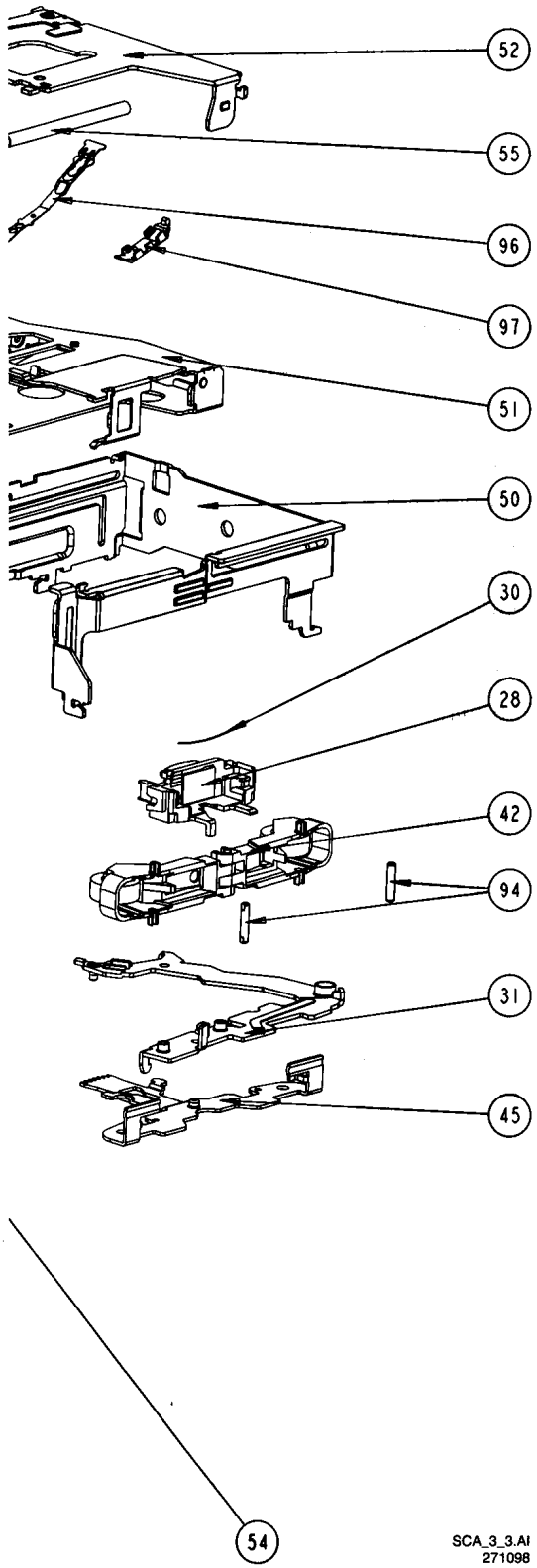
Figure 19



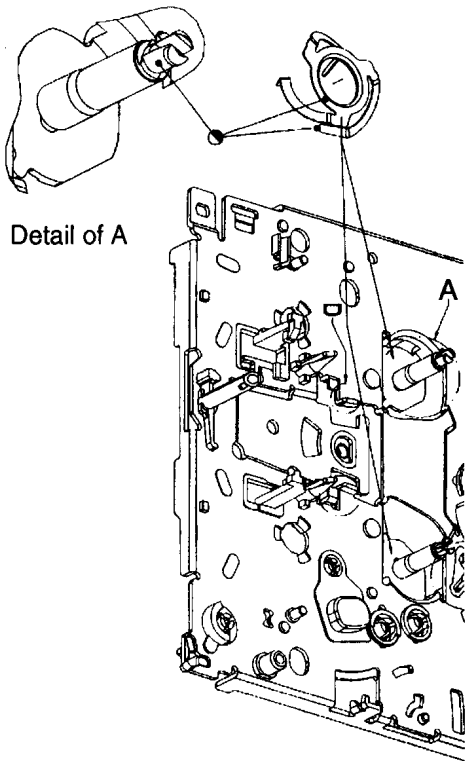


Figure 20

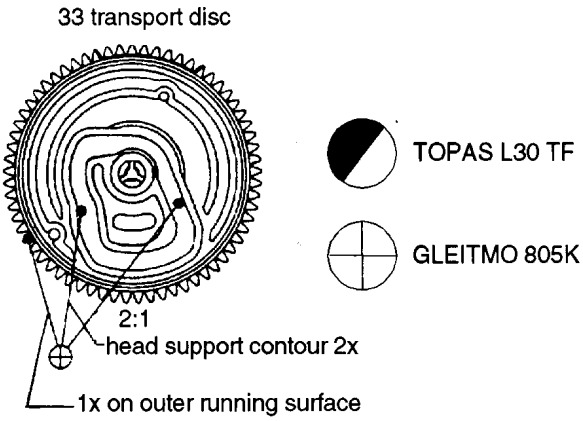


Figure 21

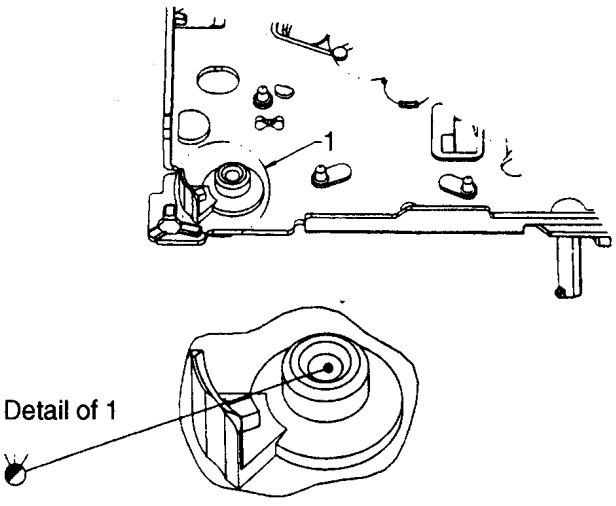


Figure 22

Philips Car Systems

automotive mannesmann VDO

CD Module CDM-M2/1.1/1.1-1/1.1R/1.2/2.3

Service Manual

12 V

1. GENERAL

The CDM-M2 is a full-logic µP- and servo-controlled CD module. The module is controlled by the headset via the standardized I²C bus. The mechanical part is the same for all versions; the table gives an overview of the different connector types, supply voltages and applications.
The CDM-M2 has a so-called 'Pirouette' loading mechanism. This means that the CD is loaded and ejected with help of a roller which touches only the edge of the CD instead of the disc surface.
This guarantees an absolute scratch-free loading and ejecting of the CD.
Other built-in protections are against: 2nd disc insertion, 8cm disc insertion and mechanism damage when inserting a CD during power-off.

2. TECHNICAL DATA

Operating voltages	:	*Refer to table (section 3)*
Crosstalk suppression	:	≥ 75 dBA - A-weighted
THD	:	≥ 60 dBA - A-weighted
S/N ratio	:	≥ 85 dBA - A-weighted
Dynamic range	:	≥ 75 dBA - A-weighted
De-emphasis	:	≥ 8 dB
Bus interface	:	I²C
Weight	:	approx. 600 g

PCS 92 011

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3. OVERVIEW OF CDM-M2 VERSIONS

Version	Control Connector	Data Connector	Supply Voltage V1	Supply Voltage V2	Remarks
1.1	11-pole MOLEX SPOX	6-pole MOLEX PICOFLEX	4.75 - 5.25VDC 5.0VDC nom.	4.75 - 5.25VDC 5.0VDC nom.	Analogue audio output
1.1-1	10-pole MOLEX PICOFLEX	6-pole MOLEX PICOFLEX	4.75 - 5.25VDC 5.0VDC nom.	4.75 - 5.25VDC 5.0VDC nom.	Analogue audio output
1.1R	11-pole MOLEX SPOX	6-pole MOLEX PICOFLEX	4.75 - 5.25VDC 5.0VDC nom.	4.75 - 5.25VDC 5.0VDC nom.	As version 1.1 - but with new push-back
1.2	11-pole MOLEX SPOX	6-pole MOLEX PICOFLEX	4.75 - 5.25VDC 5.0VDC nom.	4.75 - 5.25VDC 5.0VDC nom.	Digital audio output
2.3	14-pole APM MICRO-MATCH	Combined with Control connector	10.0 - 16.0VDC 13.2VDC nom.	4.75 - 5.25VDC 5.0VDC nom.	Navigation system application / CD-ROM

For connector pin layouts, see further on in this manual.

4. MAINTENANCE

Remark: All position numbers of the main assy are given as normal fonts; position numbers of the pick-up assy are underlined.

4.1 Cleaning and lubrication

The CD module mechanism requires periodic cleaning and lubrication.

4.2 Cleaning with alcohol

- Turntable wheel pos. 14.
- Disc clamp assy pos. 2.
- Lens of pickup (laser) unit pos. 4.

4.3 Lubrication Overviews

See page 4.

5. CHECKS

5.1 Equipment Required

- Test CD's:
  - SBC442 4822 397 30155
  - SBC444/444A 4822 397 30245
  - Audio Signals disc1 SBC429 4822 397 30184
  - A-BEX TCD721 (white scratch)
  - Philips 8A (double black dot)
  - Max. thickness 4822 397 30275
  - Min. thickness 4822 397 30276
  - Skew disc 4822 397 30277
  - Eccentr. 200µm 4822 397 30278
  - Max. radius 4822 397 60141

The CD module should be tested while connected to a suitable radio set.

5.2 Access times

- Use the test CD SBC442.
- Maximum times should be:
  - 'Load to Play': 6 sec
  - Start up: 3 sec
  - Switch track1 → track 2: 2 sec
  - Switch track1 → track 20: 4 sec
  - Play → standby: 3 sec
  - Standby → eject: 3 sec
- If one or more times exceed the max. value, check (gear) wheels pos. 5-9 + 51, feed gear assy pos. 10/11 and drive gear pos. 13 and replace if necessary. Check also the servo- and sledge (feed) motors (resp. pos. 3 and 5).

5.3 Black dot

- Use test CD SBC444A with simulated black dot of typ. 1000µm.
- No 'hitching' may occur now during play.

5.4 Double black dot

- Use test CD Philips 8A with simulated black dots of 600+300µm.
- No 'hitching' may occur now during play.

5.5 Information layer interruption

- Use test CD SBC444A with simulated interruption of typ. 1000µm.
- No 'hitching' may occur now during play.

5.6 Simulated fingerprint

- Use test CD SBC444A with simulated fingerprint (tracks 18 and 19).
- No 'hitching' may occur now during play.

5.7 'White' scratch

- Use test CD A-BEX TCD721 with a white scratch of typ. 1000µm.
- No 'hitching' may occur now during play.

5.8 Eccentricity

- Use test CD with 200ìm eccentricity.
- No audible distortion, wow or flutter may be heard now.

5.9 Thickness

- Use the 'max.- and min. thickness' test CD's.
- The module should load these discs properly and no audible distortion, wow or flutter may be heard now.

5.10 Track attainability

- Use 'Audio signals' test CD.
- Track no.99 should be reached without problems.

When one or more specifications mentioned in '5.3' - '5.10' are not met, check the sledge (feed) assy pos. 5/6/10-13, spindle motor pos. 7 and pick-up unit pos. 4. Replace if necessary.

For more information refer to the manual: 'General Check and Alignment Procedures' 4822 725 25456.

6. DISASSEMBLY PROCEDURE

Important: Before disassembling the CD module, lay the module with the pcb side up, unless otherwise noted.
Close the solder bridge on the flex foil of the pick-up (laser) unit assy pos. 4 of the drive assy pos. 43.
First the rear bracket pos. 11 should be removed!
For re-assembling, follow the procedures in reverse order. Take care that the wires, cams etc. are in the right position again after re-assembling.
For the exact position of the parts, refer to the exploded view.

6.1 CD pcb pos. 37

- Remove cable assy's pos. 59 and 60.
- Remove flexfoil of drive assy pos. 43 from the connector.
- Unplug the cables of the spindle- and sledge motor of pos. 43 and the servo motor pos. 3.
- Remove the two screws pos. 38.
- Pull the left part of the pcb slightly backward, lift it and take the pcb out.

6.2 Front bracket assy pos. 1

- First remove the CD pcb (see '**6.1**').
- Remove the two fixation screws pos. 23.
- Loosen the three springs pos. 17 and 48 from the pivots of the bracket.
- Pull off the damper from the pin of pos. 43.
- Take front bracket away.
- When re-assembling, put some spirit on the damper fixation pivots to make it easier to fix the damper.
- *Use new springs for pos. 17 and 48!*

6.3 Rear bracket pos. 11

- Remove the two fixation screws pos. 23.
- Loosen the two adhesive tapes and remove the servo motor cable wires.
- Pull off the two dampers from the pins of pos. 43.
- Take rear bracket away.
- When re-assembling, put some spirit on the damper fixation pivots to make it easier to fix the dampers.

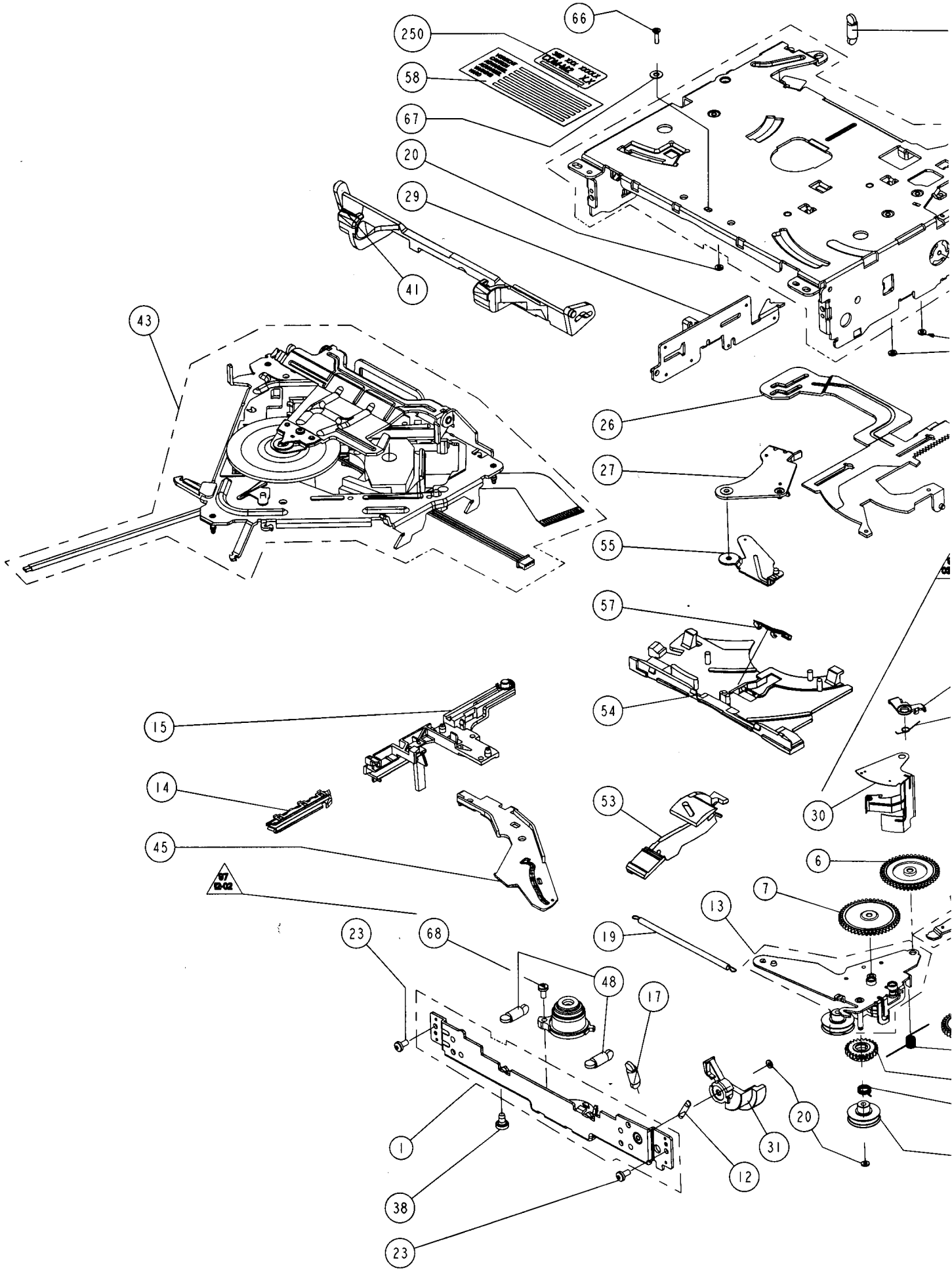
6.4 Drive assy pos.43

- First remove the pcb and brackets as described in '**6.1**', '**6.2**' and '**6.3**'.
- Remove the protection rod pos. 41.
- Unhook the two springs pos. 22.
- Supply the servo motor with a DC voltage of approx. 3...5V ('+' to motor terminal marked by red dot), to have the motor run so that command slider pos. 26 moves backward; *and* push roller pos. 8 to the left *and* push guiding/lever pos. 14/15 to the right *simultaneously*.
- Alternative method:
  Remove the servo motor by removing fixation screw pos. 23 and pulling the worm pulley side upwards; thereafter turn detection lever pos. 24 anti-clock-wise so that swing wheel pos. 51 graps in the cam of pos. 26; push and hold roller pos. 8 to the left *and* the guiding/lever pos. 14/15 to the right *simultaneously* and turn pos. 8 anti-clockwise until locking left pos. 27 moves to the right.
- As soon as pos. 27 moves to the right, the drive assy can be taken out.
- When re-assembling, *use new springs for pos. 17, 22 and 48!*

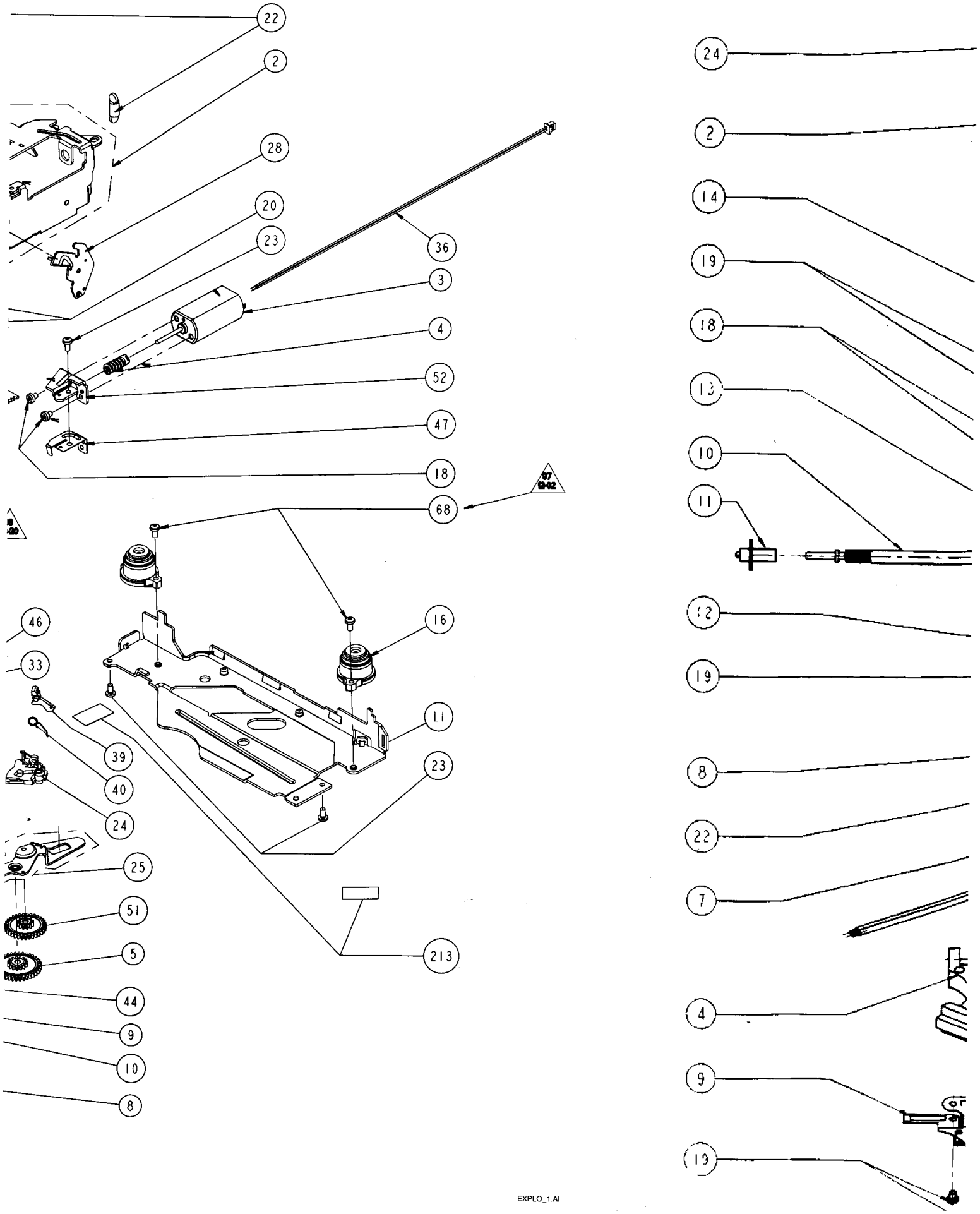
***Important**: After re-assembling, **DON'T FORGET** to remove the solder bridge from the pick-up unit pos. 4!*

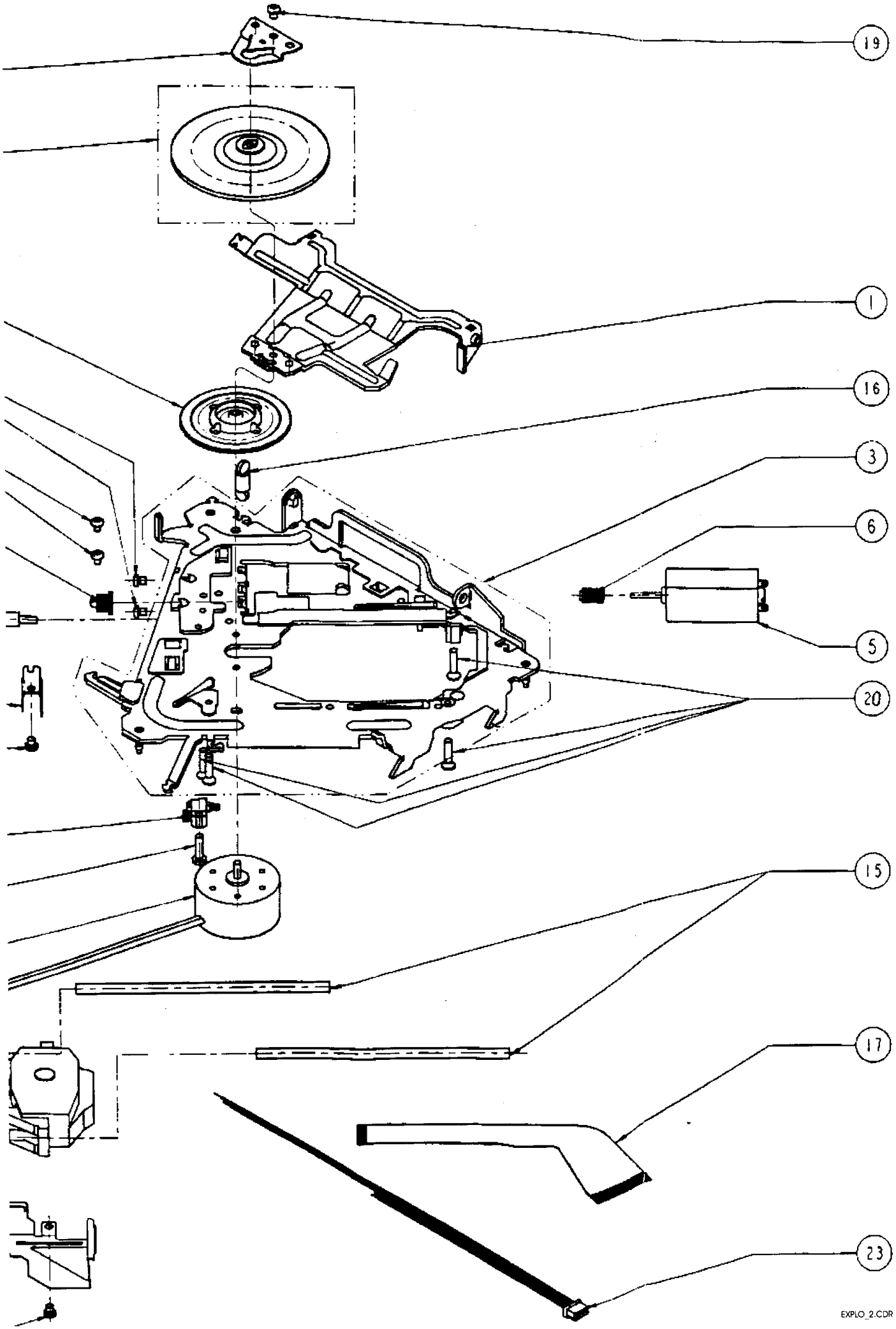
7. EXPLODED VIEWS

7.1 Exploded view changer mechanism



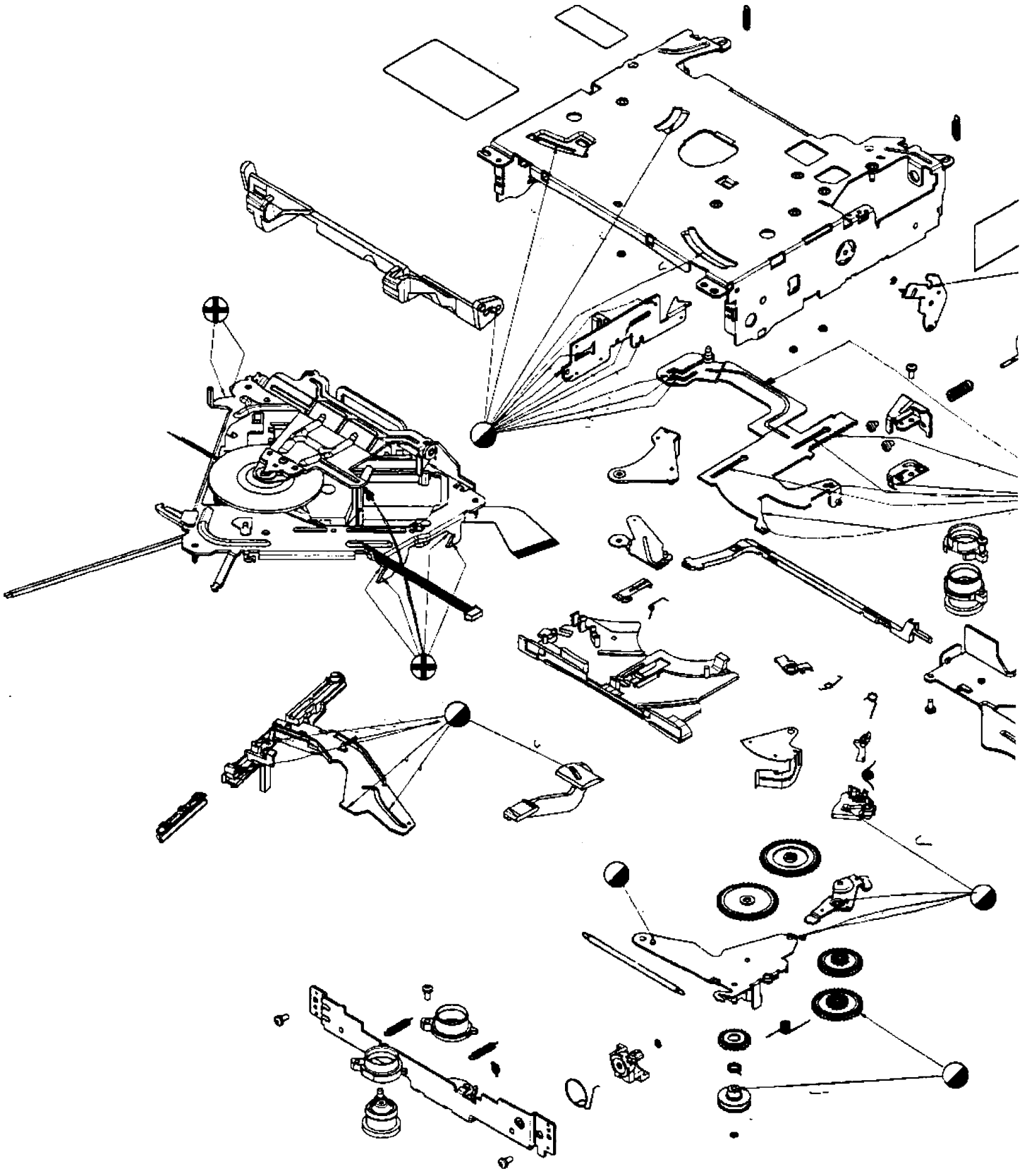
7.2 Exploded view pick-up unit



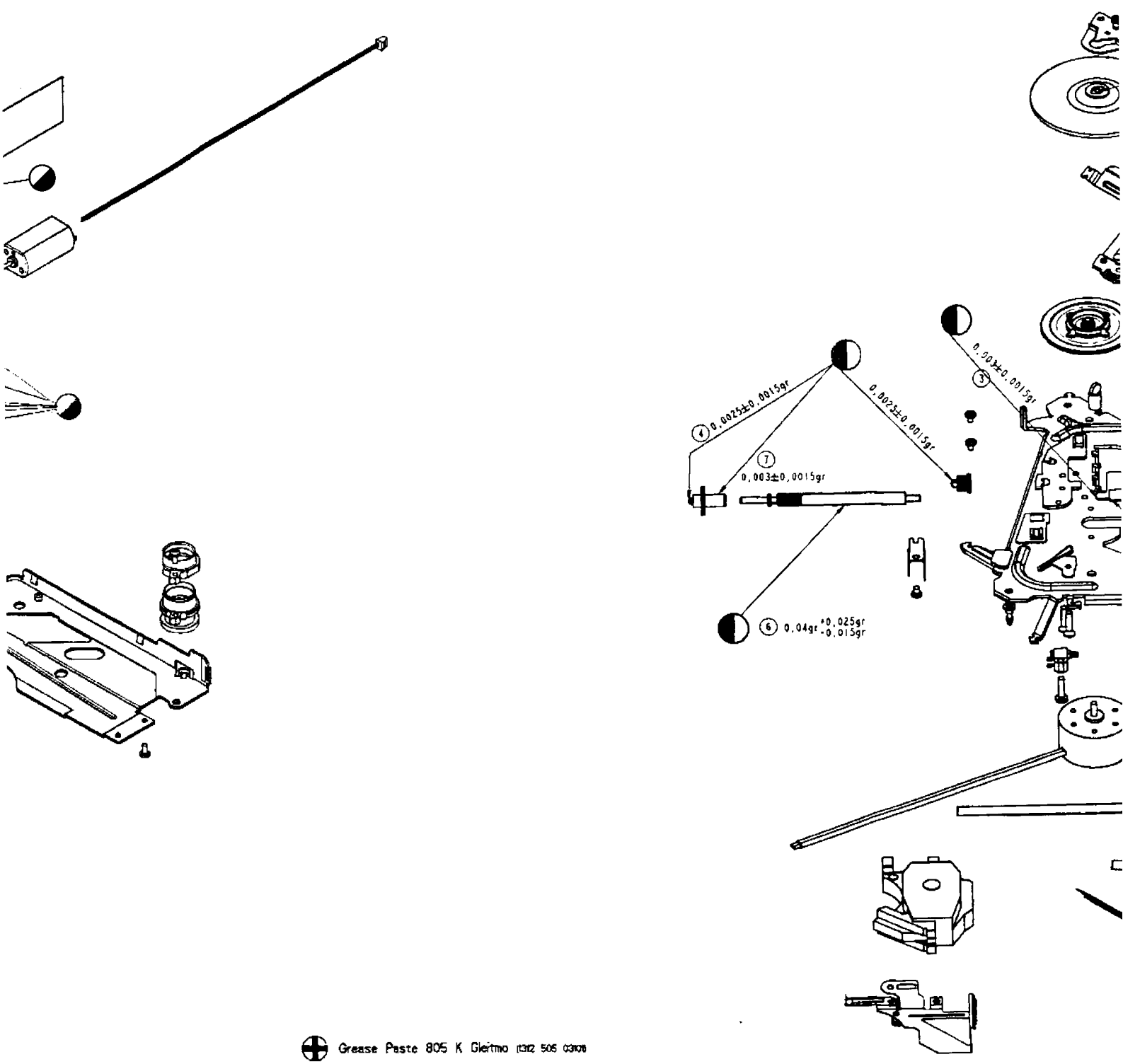

19
1
16
3
6
5
20
15
17
23
EXPLO_2.CDR

8. LUBRICATION OVERVIEWS

8.1 Lubrication overview changer mechanism



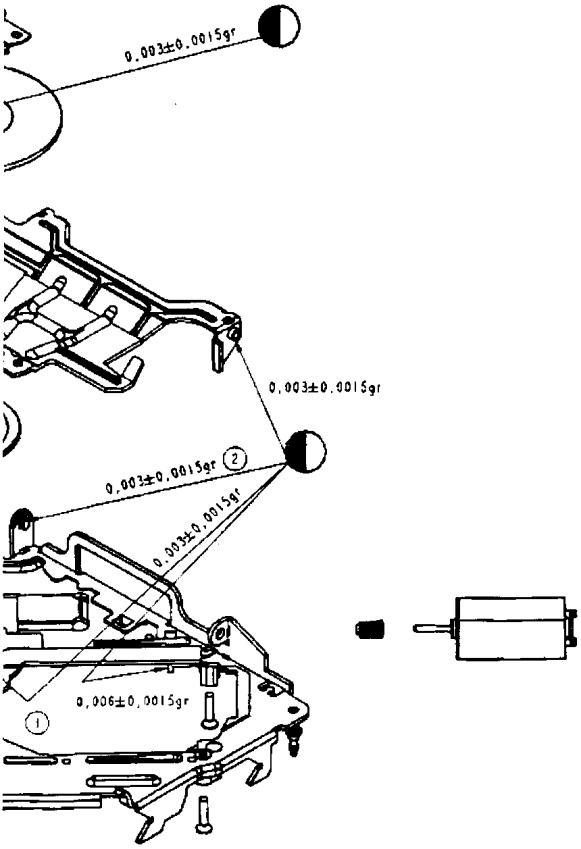
8.1 Lubrication overview pick-up unit

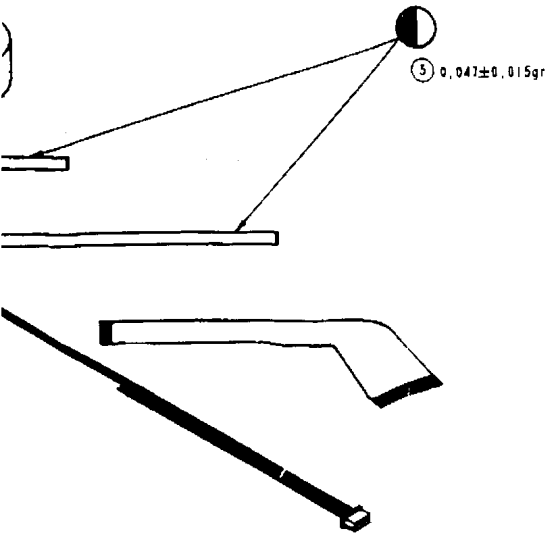


Grease Paste 805 K Gleitmo (0312 505 03108)

Grease L 30 TF (0304 523 17601)

EXPLO_3.CDR





① Bearing point of the feed gear assy on the side of the sledge motor.
② The grease is put on the bearing point of the pressure plate.
③ The axle of the drive gear.
④ The grease is put on the bearing point of the feed gear assy. on the side of the sledge motor (①)
⑤ Instead of the OPU we grease the surface of the main pick shafts by using a special equipment.
⑥ We grease the surface of the feed gear. In this way the grease disperses better on the length of the feed gear.
⑦ After mounting

97 09-09 completely changed and komplett geaendert und 3rd release 3. Freifreigabe

Molykote PG - 602

(1304 501 09801)

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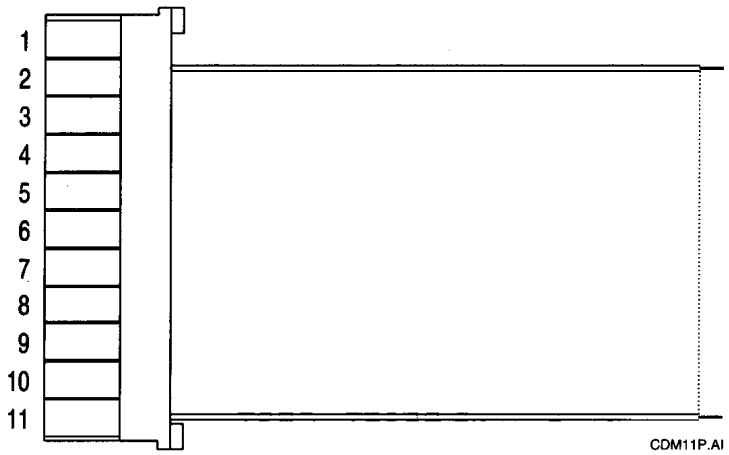
9. CONNECTIONS OVERVIEW

9.1 Connections CDM-M2/1.1/1.1R



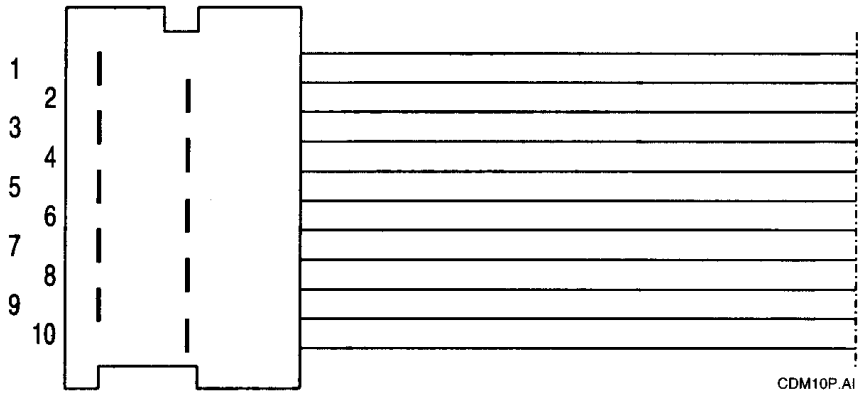
11 POLE CONNECTOR

Pin	Signal
1	N.C.
2	INSERT SWITCH
3	GROUND
4	+ 5VDC (ANAL.)
5	SERIAL CLOCK - SCL
6	SERIAL DATA - SDA
7	BUS REQUEST - CRQ
8	+ 5VDC (DIG.)
9	µP RESET - CRST
10	GROUND
11	NOT USED

6 POLE AUDIO CONNECTOR

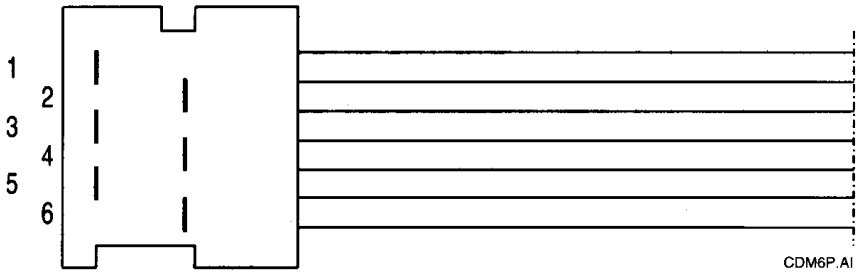
Pin	Signal
1	AUDIO GROUND
2	AUDIO RIGHT CHANNEL
3	AUDIO GROUND
4	AUDIO LEFT CHANNEL
5	AUDIO GROUND
6	NOT USED

9.2 Connections CDM-M2/1.1-1



11 POLE CONNECTOR

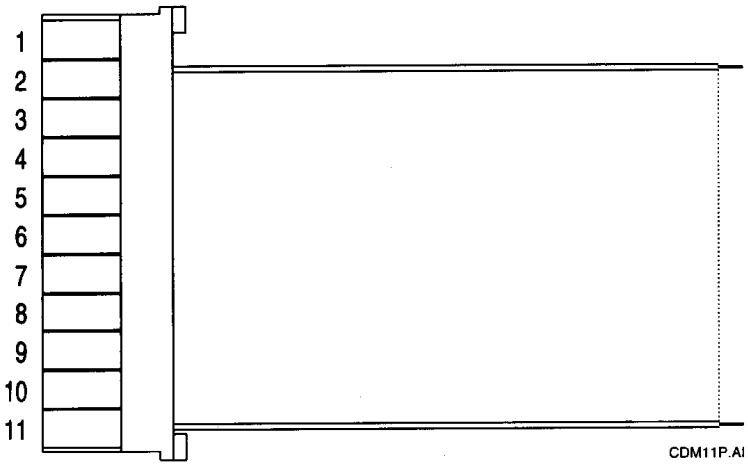
Pin	Signal
1	INSERT SWITCH
2	GROUND
3	+ 5VDC (ANAL.)
4	SERIAL CLOCK - SCL
5	SERIAL DATA - SDA
6	BUS REQUEST - CRQ
7	+ 5VDC (DIG.)
8	µP RESET - CRST
9	NOT USED
10	NOT USED



6 POLE AUDIO CONNECTOR

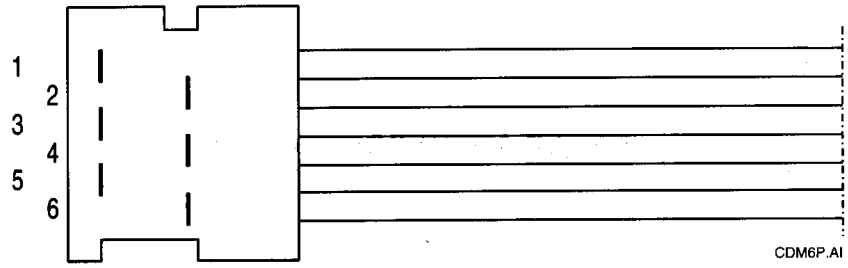
Pin	Signal
1	AUDIO GROUND
2	AUDIO RIGHT CHANNEL
3	AUDIO GROUND
4	AUDIO LEFT CHANNEL
5	AUDIO GROUND
6	NOT USED

9.3 Connections CDM-M2/1.2



11 POLE CONNECTOR

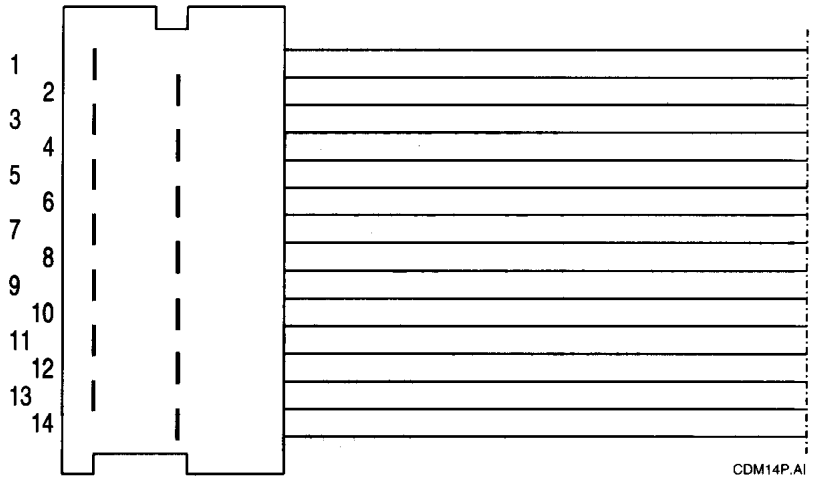
Pin	Signal
1	N.C.
2	INSERT SWITCH
3	GROUND
4	+ 5VDC (ANAL.)
5	SERIAL CLOCK - SCL
6	SERIAL DATA - SDA
7	BUS REQUEST - CRQ
8	+ 5VDC (DIG.)
9	µP RESET - CRST
10	GROUND
11	NOT USED



6 POLE DATA CONNECTOR

Pin	Signal
1	DIGITAL GROUND
2	SERIAL BIT CLOCK - SCLK
3	DIGITAL GROUND
4	SERIAL DATA
5	WORD CLOCK - WCLK
6	NOT USED

9.4 Connections CDM-M2/2.3



14 POLE CONNECTOR

Pin	Signal
1	INSERT SWITCH
2	GROUND
3	+ 14VDC (SWITCHED)
4	SERIAL CLOCK - SCL
5	SERIAL DATA - SDA
6	BUS REQUEST - CRQ
7	+ 5VDC (DIG.)
8	µP RESET - CRST
9	GROUND
10	SERIAL BIT CLOCK - SCLK
11	GROUND
12	SERIAL DATA
13	WORD CLOCK - WCLK
14	ERROR FLAG - EF

10. PARTS LIST

Notes: For the exploded views, refer to page 3.

The CDM-M2 is subdivided into the following main parts:
CD loader mechanism, drive (pick-up) unit, pcb and cable set.
However, the detailed exploded views both of the changer mechanism and the pick-up unit are inserted for completeness purposes and to clarify the maintenance – and disassembly procedures.

10.1 CDM-M2 mechanical parts

	4822 691 10712	Loader assy complete
23	4822 502 12001	Screw M2x4
	4822 310 11146	Spring kit for drive
38	4822 502 12795	Screw M2,5x6
43	4822 691 10715	Drive assy
	4822 691 10662	CDM-M2/1.1 complete (with pcb/packed)
	4822 691 10729	CDM-M2/1.1-1 complete (with pcb/packed)
	4822 691 10731	CDM-M2/1.1R complete (with pcb/packed)
	4822 691 10694	CDM-M2/1.2 complete (with pcb/packed)
	4822 691 10732	CDM-M2/2.3 complete (with pcb/packed)

10.2 CDM-M2 electrical parts

37	4822 214 12799	PWB assy CDM-M2/1.1/1.1
59	4822 320 12344	Cable assy CDM-M2/1.1/1.1R/1.2, 10-pole spox
60	4822 320 12345	Cable assy CDM-M2/1.1/1.1-1/1.1R/1.2, 6-pole picoflex
61	4822 214 12764	PWB assy digital CDM-M2/1.2
62	4822 214 12766	PWB assy CDM-M2/1.1R
63	4822 214 12801	PWB assy CDM-M2/2.1
65	4822 320 12347	Cable assy CDM-M2/1.1-1, 10-pole picoflex
69	4822 214 12763	PWB assy digital CDM-M2/2.3
70	4822 320 12346	Cable assy CDM-M2/2.3, 14-pole micromatch